## PATENT COOPERATION TREATY

## **PCT**

## TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2003P11480WO			ce	FOR FURTHER ACTION See Form PCT/IPEA/41		See Form PCT/IPEA/416			
International application No.				International filing da	nte (day/month/year)	Priority date (day/month/year)			
PCT/EP2004/013660			660	01.12.200	4	11.12.2003			
Internati	ional Pa	tent Classification	n (IPC) or natio	nal classification and	IPC				
F01 D25/08, F01 D5/28									
Applicant SIEMENS AKTIENGESELLSCHAFT									
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.									
2.	This R	EPORT consists	of a total of _	6	sheets, includ	ing this cover sheet.			
3.	This re	eport is also accor	mpanied by Al	NNEXES, comprising:					
	a. 🔀	(sent to the	applicant and	to the International Bi	ureau) a total of 7	sheets, as follows:			
	a. (sent to the applicant and to the International Bureau) a total of 7 sheets, as follows:  sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).								
	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental								
	_	Box.  ☐							
	b. <u></u>	sent to the	International I	Bureau only) a total of	(indicate type and numl	per of electronic carrier(s))			
	, containing a sequence listing and/or tables								
	related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).								
4.	This re	eport contains ind	ications relatir	ng to the following iten	ms:				
	$\boxtimes$	Box No. I	Basis of the	report					
		Box No. II	Priority						
				shment of opinion with	regard to novelty, inve	ntive step and industrial applicability			
	Box No. IV Lack of unity			y of invention	y of invention				
	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement								
		Box No. VI	Certain docu	iments cited					
Box No. VII Certain defects in the international application									
		Box No. VIII	Certain obse	ervations on the interna	ational application				
Date of	submiss	ion of the demand	d		Date of completion of	this report			
Name and mailing address of the IPEA/EP					Authorized officer				
Facsimile No.					Telephone No.				

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/013660

Box	k No. I	Basis of the report								
1.		h regard to the language, this report is based on the interna cated under this item.	tional application in the language in	which it was filed, unless otherwise						
		This report is based on translations from the original lang which is the language of a translation furnished for the pu		,						
		international search (Rule 12.3 and 23.1(b))	international search (Rule 12.3 and 23.1(b))							
		publication of the international application (Rule 12	2.4)							
		international preliminary examination (Rule 55.2 at								
2.	rece		gard to the <b>elements</b> of the international application, this report is based on (replacement sheets which have been furnished to the g Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to ort):							
		the international application as originally filed/furnished								
	$\boxtimes$	the description:								
		pages 1-15		as originally filed/furnished						
		pages*	received by this Authority on							
		pages*	received by this Authority on							
	$\boxtimes$	the claims:								
		nos.		as originally filed/furnished						
		nos.*	as amended (togethe							
		nos.* _ 1-30	received by this Authority on	12.04.2005 with letter of 08.04.2005						
		nos.*	received by this Authority on							
	$\boxtimes$	the drawings:								
		sheets <u>1/7-7/7</u>		as originally filed/furnished						
		sheets*								
		sheets*	received by this Authority on							
		a sequence listing and/or any related table(s) - see Supple	emental Box Relating to Sequence L	isting.						
3.		The amendments have resulted in the cancellation of:								
		the description, pages								
		the claims, nos.								
		the drawings shoots/figs								
		the sequence listing (specify):								
		any table(s) related to sequence listing (specify):								
4.		This report has been established as if (some of) the ame they have been considered to go beyond the disclosure as								
		the description, pages								
		the claims, nos.								
		the drawings, sheets/figs								
		the sequence listing (specify):								
		any table(s) related to sequence listing (specify):		_						
*	If ite	em 4 applies, some or all of those sheets may be marked "s.	uperseded."							

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Box			ticle 35(2) with regard to novelty, inventive step or industrial applicability; oporting such statement	
1.	Statement			
	Novelty (N)		1-30	YES
		Claims		NO
Inventive step (IS)		Claims		YES
		Claims	1-30	NO
	Industrial applicability (IA)		1-30	YES
		Claims		NO

- 2. Citations and explanations (Rule 70.7)
  - 1. This report makes reference to the following documents:
  - D1: US 2003/027012 A1 (WANG HONGYU ET AL) 6 February 2003
  - D2: US 5 740 515 A (BEELE WOLFRAM) 14 April 1998
  - D3: US 2003/008167 A1 (BARBEZAT GERARD ET AL) 9
    January 2003
  - D4: WO 03/006883 A (SIEMENS AG) 23 January 2003
  - D5: US 5350599 A (RIGNEY DAVID V ET AL) 27 September 1994
  - 2. The application does not meet the requirements of PCT Article 6, because claims 1, 11, 12 and 26-30 lack clarity.
  - 2.1 According to claim 1, line 9, the component is used at use temperatures of up to a maximum of 850°C. The apparent further restriction in line 10 ("more particularly, up to a maximum of 650°C") serves to generalize the subject matter. Components that are suitable for longer periods of use at use temperatures of up to a maximum of 850°C are also suitable for use at use temperatures of

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

650°C. Therefore, the scope of the subject matter for which protection is sought is not clearly defined.

2.2 Claims 11, 12 and 26-30, which are directed to a component, are defined in terms of the use of the component, for example in a steam turbine. These claims should have related either to a product in which the component is used (for example, a steam turbine) or to an activity (for example, a process or an application). See also the PCT Guidelines, 5.37.

In this report, these claims have been interpreted as products.

- 3. Irrespective of the above-mentioned lack of clarity, the subject matter of claim 1 also fails to involve an inventive step within the meaning of PCT Article 33(3), and therefore the requirements of PCT Article 33(1) have not been met.
- 3.1 The following indication of function does not enable a person skilled in the art to determine what technical features are necessary in order to carry out the function indicated: "for use in ... a longer period of use".
- 3.2 D1 discloses (the reference signs in parentheses refer to D1):
  - a component having a ceramic thermal

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

insulating layer (claim 2) and having an erosion protection layer (22) on the thermal insulating layer (32), the thermal insulating layer being porous (paragraph [0021]).

- 3.3 Therefore, insofar as can be determined, the subject matter of claim 1 differs from the component known from D1 only in that a metal erosion protection layer is provided.
- 3.4 Consequently, the problem to be solved by the present invention can be regarded as that of providing an alternative to the erosion protection layer used in D1.
- 3.5 Metal erosion protection layers are, however, known from the prior art; see, for example, D2 (column 2, lines 16-21), D3 (table on page 2) and D4 (page 7, lines 14-27). Therefore a metal layer is only one of several obvious possibilities from which a person skilled in the art would choose according to the circumstances in order to solve the problem of interest, without thereby being inventive.
- 3.6 Therefore, the subject matter of claim 1 does not involve an inventive step.
- 4. Dependent claims 2-30 contain no features that, in combination with the features of any claim to which they refer, meet the PCT requirements for inventive step, since these additional features are already known from the prior art (see the documents

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cited in the search report and the corresponding text passages) or since these features are of the kind that a person skilled in the art would use on the basis of familiar circumstances.

It should be noted that the embodiments described in claims 16 and 19 do not come under the present main claim 1 (for example, chrome carbide and tungsten carbide are not metallic).

These claims should have been defined as independent claims, or the main claim 1 should have been defined differently.

Furthermore, the additional features of claims 16 and 19 are known from D5 and therefore definitely do not involve an inventive step.

5. The invention is industrially applicable in the field of steam turbines (PCT Article 33(4)).